

CHANGE ISSUE – RTCA/DO-242

MASPS for ADS-B

Rev. A

Tracking Information (committee secretary only)	
Change Issue Number	73
Submission Date	04/17/03
Status (open/closed/deferred)	TBD
Last Action Date	04/17/03

Short Title for Change Issue:	Clarification needed for Aircraft/Vehicle Length and Width Code
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MASPS Document Reference: DO-242A		Originator Information:	
Entire document (y/n)	N	Name	Gary Furr
Section number(s)	3	Phone	609-485-4254
Paragraph number(s)	3.4.4.6	E-mail	Gary.furr@titan.com
Table/Figure number(s)	Table 3-10	Other	garyfurr@hotmail.com

Proposed Rationale for Consideration (originator should check all that apply):	
<input type="checkbox"/>	Item needed to support of near-term MASPS/MOPS development
Y	DO-260/ED-102 1090 MHz Link MOPS Rev A
<input type="checkbox"/>	ASA MASPS
<input type="checkbox"/>	TIS-B MASPS
Y	UAT MOPS and SARPS
<input type="checkbox"/>	Item needed to support applications that have well defined concept of operation
<input type="checkbox"/>	Has complete application description
<input type="checkbox"/>	Has initial validation via operational test/evaluation
<input type="checkbox"/>	Has supporting analysis, if candidate stressing application
Y	Item needed for harmonization with international requirements
Y	Item identified during recent ADS-B development activities and operational evaluations
Y	MASPS clarifications and correction item
<input type="checkbox"/>	Validation/modification of questioned MASPS requirement item
<input type="checkbox"/>	Military use provision item
<input type="checkbox"/>	New requirement item (must be associated with traffic surveillance to support ASAS)

Nature of Issue:	<input type="checkbox"/>	Editorial	Y	Clarity	<input type="checkbox"/>	Performance	Y	Functional
<u>Issue Description:</u> During discussions on the UAT SARPS Technical Manual, it was pointed out by the International community that not all aircraft would fit into a box defined by the inequalities defined for all of the Aircraft/Vehicle Length and Width Code categories shown in Table 3-10 of the ADS-B MASPS (DO-242A), Table 2-35 of the UAT MOPS (DO-282) and Table 2-74 in the new [at the time proposed] 1090 MOPS (DO-260A).								

<u>Originator's proposed resolution if any:</u> It was proposed that a better solution to the A/V L/W Code definition would be to remove the left side of all inequalities for both Length and Width categories in the above mentioned Tables and for decimal A/V L/W Codes 14 and 15 to set the Length to less than some very large number, such as 200 meters. <div style="text-align: center;">(Continued on next page.)</div>

Originator's proposed resolution if any (continued):

Following this suggestion, WG-3 discussed this with individuals from WG-6 that were initially responsible for the creation of ADS-B MASPS Table 3-10 and it was agreed that this approach would be acceptable. Therefore, in the [to be] published 1090 MOPS (DO-260A), all of the left side of the inequalities have been removed for both Length and Width categories and for decimal A/V L/W Codes 14 and 15, the Length is set to less than 200 meters. The same needs to be done for DO-242B and DO-282A.

The following is how the “clarified table” is presented in DO-260A:

2.2.3.2.7.2.11 “Aircraft/Vehicle Length and Width Code” Subfield in Aircraft Operational Status Messages

The Aircraft/Vehicle (A/V) Length and Width Code Subfield is a four-bit field (“ME” bits 21 to 24, Message bits 53 to 56) of the Aircraft Operational Status Messages (Subtype=1, for Surface Participants). This field **shall** describe the amount of space that an aircraft or ground vehicle occupies. The A/V Length and Width Code is based on the actual dimensions of the transmitting aircraft or surface vehicle as specified in Table 2-74. Each Aircraft or Vehicle **shall** be assigned the smallest A/V Length and Width Code for which its overall length and width qualify it.

Note: For example, consider a powered glider with overall length of 24 m and wingspan of 50 m. Normally, an aircraft of that length would be in length category 1 (that is, have a length code of 1). But since the wingspan exceeds 34 m, it does not qualify for even the “wide” subcategory (width code = 1) of length category 1. Such an aircraft would be assigned length code = 4 and width code = 1, meaning “length less than 55 m and width less than 52 m.”

Table 2-74: “Aircraft/Vehicle Length and Width Code” Encoding

A/V - L/W Code (Decimal)	Length Code			Width Code	Length Category (meters)	Width Category (meters)
	ME Bit 49	ME Bit 50	ME Bit 51	ME Bit 52		
0	0	0	0	0	L < 15	W < 11.5
1				1		W < 23
2	0	0	1	0	L < 25	W < 28.5
3				1		W < 34
4	0	1	0	0	L < 35	W < 33
5				1		W < 38
6	0	1	1	0	L < 45	W < 39.5
7				1		W < 45
8	1	0	0	0	L < 55	W < 45
9				1		W < 52
10	1	0	1	0	L < 65	W < 59.5
11				1		W < 67
12	1	1	0	0	L < 75	W < 72.5
13				1		W < 80
14	1	1	1	0	L < 200	W < 80
15				1		W ≥ 80

Working Group 6 Deliberations:

WG6 has not formally reviewed this Issue Paper to date.